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The Bulletin *of the Amateur Entomologists' Society*



Volume 71 • Number 501

April 2012



ISSN 0266-836X

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000174486



Founded in 1935

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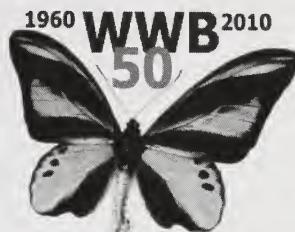
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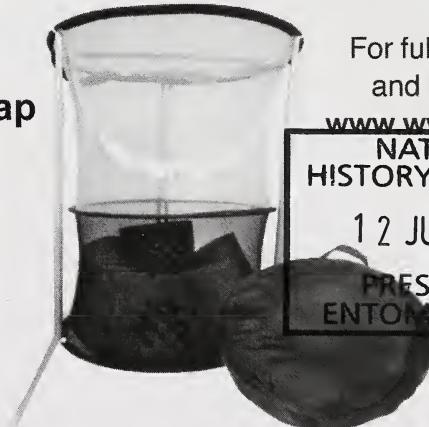
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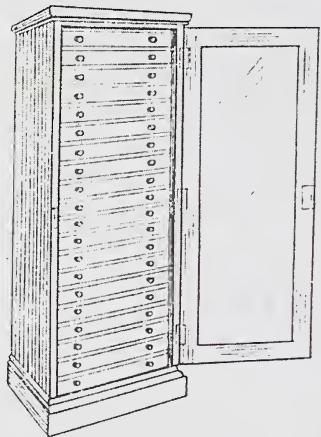
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Bulletin Cover



The photograph on this month's cover is the Common Green Lacewing, *Chrysoperla carnea*.

The name "carnea" has the same Latin root as "carnal" and "carnivorous" – relating to "flesh". This species hibernates as an adult, often finding its way into houses, and as its bodily food reserves are depleted it turns pink – or flesh-coloured!

It is a near Pandemic species and is probably absent only from the Polar Regions. Recently what was thought to be a single species has been divided into many new species on the basis of ecology, the sonic frequency of its "song" (a rasping, connected with mating, produced by rubbing the abdomen on the substrate), geography and DNA profiling. It seems to provide a living example of active evolution.

In Britain, we have three valid, full species within the complex – *carnea* sensu stricto (this photograph), which is near ubiquitous, *lucasina*, probably ubiquitous but numerically far less common, and *pallida*, which seems to be rather restricted.

Photographed in Kent by Paul Sokoloff



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Editorial

Once again, I have the privilege of providing information about the entomological fauna of Corfu. Since my last contributions about the remarkable invertebrate fauna of the island (Corfu Special Edition: *Bulletin* # 485, and *Bulletin* # 491: 131-136) I have visited the island twice more, in April 2011 and February 2012, allowing me to see some of the species that appear earlier in the year, including one of Europe's most spectacular butterflies, the Southern Festoon *Zerynthia polyxena*. This edition provides a revised checklist of butterflies for the island with photographs of this and other species, including the Eastern Baton Blue *Pseudophilotes vicrama*, which, like *Z. polyxena* and a number of other species, has declined dramatically in many parts of its range through the loss of ruderal and bare ground habitats.

The coleopteran fauna of the island is also highlighted and shows that the taxonomic issues regarding the status of a number of species are far from being resolved! I hope that the prospect of becoming part of the process of unravelling the true genetic identities of certain species will provide a stimulus for their study. Brainteasing exercises aside, the experience of finding some of these species in their natural habitat provides its own rewards, be it the Eastern Orange-tip *Anthocharis damone* in the mountain valleys of Mount Pantokrator or large and impressively powerful water beetles in the temporary pools near Issos beach in the south.

This edition exemplifies the fact that the diversity of Corfu's invertebrate fauna is gained from its pivotal position in the Mediterranean. For exactly the same reason that it was sought as a strategic outpost for so many conquering empires, it forms a natural crossroads for the distribution of species, where east meets west and north meets south. This, of course, is an over-simplification, and a more detailed representation for Greece and its islands is provided by Arndt *et al.* (see article on Carabidae in this issue):

"Greece is an intersection point for several distribution patterns. There are Palaearctic and Palaeotropical faunal elements with the following distribution patterns: Eurasian, European-American, European, Iranian-Turanian, Aegaeidean, Palaeomediterranean and Pontomediterranean, and Balkan endemics."

An example of the European-American fauna was found in February 2012 in the form of the stunning metallic purple ground beetle, *Mydas chalybaeus*, as shown in the carabids article in this issue.



A brief foray into the Orthoptera and Odonata provides a new species of grasshopper for Corfu, and a few hints and tips regarding identification of dragonflies and damselflies. This includes key features of the Migrant Spreadwing *Lestes barbarus*, a species documented many years ago by Dr Theodore Stephanides, who was so humorously immortalised in Gerald Durrell's famous trilogy of books about the island¹. In the last special issue, it was noted that, "...this work, in its entirety, was grown from a seed planted by Gerald Durrell." What I find remarkable is the fact that all these years later, I am still referring to the work of Gerald Durrell's mentor, Dr Stephanides. Earlier this year, I was very kindly invited by Dr Lee Durrell to the Jersey Zoological Park which is run by the Durrell Conservation Trust in Jersey, and given access to Dr Stephanides' work. There was one volume in particular that I wanted to see, having been unable to access it through the Durrell School of Corfu from its repository in Athens, and rightly so, this important volume now apparently exists in only 7 academic institutions worldwide. It was therefore a great privilege to have in my hand Gerald Durrell's copy of *A survey of the freshwater biology of Corfu and of certain other regions of Greece*, signed to his friend by Dr Stephanides himself, and to read from its pages the vibrant picture of Corfu's pre-war freshwater fauna (Figure 1). It was the polymath, Dr Stephanides, who laid the foundation for so much of our knowledge about the modern day aquatic fauna of the island.



Figure 1. The author and Dr Lee Durrell with Dr Stephanides' work on the freshwater biology of Corfu (Copyright: Colin Stevenson)

¹ *My Family and Other Animals, Birds, Beasts and Relatives*, and *The Garden of the Gods*.



I have now spent much time surveying the island of Corfu, but it is visiting the old haunts described by Gerald Durrell in such evocative terms that bring back so many memories from that golden trilogy of books. A great favourite of mine is Lake Scotini, and I cannot absorb myself in its warm sunlit waters without recalling Gerald Durrell's description of Theodore in *The Pygmy Jungle* chapter from *Birds, Beasts and Relatives*:

“... armed with our collection of nets and collecting boxes, (we) would approach the lake. Here we would potter happily for the rest of the morning, pacing with the slow concentration of a pair of fishing herons, dipping our nets into the weed-filigreed water. Here Theodore came into his own more than anywhere else. From the depths of the lake, as he stood there with big scarlet dragonflies zooming like arrows around him, he would extract magic that Merlin would have envied.”

And the magic continues...

“Here in the still, wine gold waters, lay a pygmy jungle. On the lake bottom prowled the deadly dragonfly larvae, as cunning predators as the tiger, inching their way through the debris of a million last years leaves. Here the black tadpoles, sleek and shiny as licorice drops, disported in the shallows like plump herds of hippo in some African river. Through green forests of weed the multicoloured herds of microscopic creatures twitched and fluttered like flocks of exotic birds...”

I often wonder what Gerald Durrell and Theodore Stephanides would have made of it all now. It is no secret that Gerald Durrell became disheartened by the inevitable rise of the tourist industry on an island as beautiful as Corfu, not least because of his perception that he was partly responsible for popularising the island through his books. Nevertheless, it is directly through him that so many of us have chosen to study and enjoy the wildlife of Corfu, and place its riches into the wider context of the global biodiversity that we are all striving to protect. Moreover, it is the ongoing study of this wildlife that brings it to life for a wider audience, and highlights the need to conserve and protect the areas where it can still be found.

If Gerald Durrell and Theodore Stephanides could observe their legacy, from the animated discussions about the taxonomy of Corfiot beetles and other insects, and the examination of the habitat requirements of rare butterflies on the slopes of Mount Pantokrator, to the review of the climate induced appearance of some spectacular new species including the electric pink dragonfly *Trithemis annulata*, they would probably not be displeased!

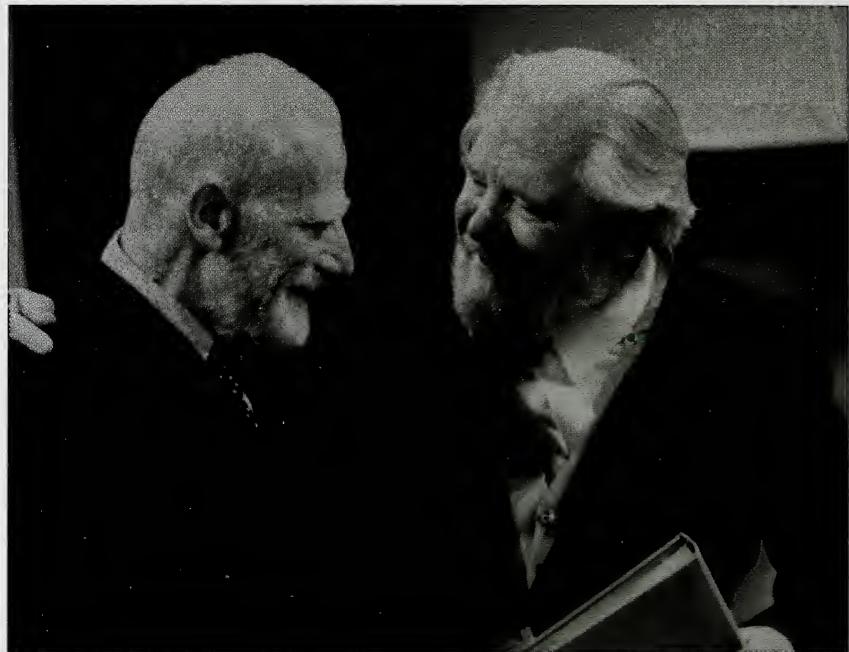


Figure 2. The old masters, Dr Theodore Stephanides and Gerald Durrell OBE. Copyright: Thames Television, London. Reproduced with kind permission from the Durrell collection.





Key identification features for the Red-veined Darter *Sympetrum fonscolombii* (Selys, 1840) and other Odonata in Corfu (Kérkira)

by Dr Peter G. Sutton (7388)

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A previous checklist for the dragonflies (Odonata) of Corfu (Sutton, 2009) described the presence of 40 species on the island, which is by far the richest diversity of dragonfly species in the Ionian islands. Among these were listed five species of red darter dragonflies, the *Sympetrum* species. A recent article by Alker (2010) highlighted the fact that the degree of red wing venation was, "...not adequately covered in the key identification works, which could easily lead to misidentification and apparently does so on a regular basis", and goes on to make the statement, "A red coloured darter species with red veins isn't necessarily a Red-veined Darter." It appears that the Common Darter *Sympetrum striolatum* in particular (which is found in Corfu), can possess the extensive red veining that can lead to confusion with the Red-veined Darter *Sympetrum fonscolombii*.

In April 2011 I recorded a red-veined dragonfly at Limni Korission in southern Corfu and immediately assumed it to be the Red-veined Darter. The first feature that I looked for to confirm the identification was the yellow patch at the base of the hindwing. Interestingly, it wasn't there! Within a short time I had used two other identification features to confirm it as *fonscolombii*: the blue underside to the eye and the black-bordered yellow pterostigma on the wing tips (Figure 1).

I had previously encountered the Eastern Willow Spreadwing *Lestes parvidens* in Corfu and in May 2011, I recorded another of the emerald damselflies at a small farmland lake in the Ropa Valley. This time it was the Migrant Spreadwing¹ *Lestes barbarus* (Figure 2). The key identification feature for this species (which is larger and paler than the other emeralds) is the pale, bicoloured pterostigma at the wing tips (Figure 3).

At the same lake were male and female specimens of the Variable Damselfly *Coenagrion pulchellum*. The male was easy to identify using the broken antehumeral stripe on its thorax (Figure 4). The female (Figure 5) was slightly more difficult and relied on the exaggerated shape of the pronotum to confirm its identity. Boudot *et al.* (2009) confirm that this species becomes scarce in southern Mediterranean Europe and indicate that it may decline in the future due to global warming.

¹ formerly known as the Southern Emerald Damselfly.



Figure 1. Red-veined Darter *Sympetrum fonscolombii*, showing lack of yellow patch at base of hindwing, black-bordered yellow pterostigma, and blue underside to eye.



Figure 2. Migrant Spreadwing *Lestes barbarus*, Ropa Valley.



Figure 3. Diagnostic feature for *Lestes barbarus*, pale, bicoloured pterostigma.



Figure 4. Diagnostic feature for male Variable Damselfly *Coenagrion pulchellum*, broken antehumeral stripe on pronotum.



Figure 5. Female Variable Damselfly *Coenagrion pulchellum*, Ropa Valley.



Figure 6. Common Blue-tailed Damselfly *Ischnura elegans*, immature female C-type gynomorph, near Spartera.



A trip to a stream at Spartera near the southern tip of the island produced a final point of interest. I was initially thrown by the lack of an antehumeral stripe and the apparent metallic green colouration of this damselfly. In fact, it turned out to be an immature specimen of the Common Blue-tailed Damselfly *Ischnura elegans* (Figure 6), the so-called "Immature female C-type gynomorph" described by Jödicke (2006).

The search for the two rarest odonatan residents in Corfu, the Greek Red Damsel *Pyrrhosoma elizabethae* and the Turkish Red Damsel *Ceriagrion georgifreyi*, continues, with a focus on well-vegetated waterways on the island. Both species, especially the Greek Red Damsel, are globally threatened (Kalkman, 2005; Lopau, 1999, 2000, 2006; Boudot *et al.* 2009) and any information regarding the ongoing presence of these species in Corfu would be very welcome.

In 2010, another indispensable *Libellula* supplement was produced (Lopau, 2010), focussing on the dragonfly fauna of Greece. This publication has high resolution maps throughout and shows the approximate locations for the last sightings of both species in Corfu. The flight period histograms indicate that both species are at their most abundant in June.

References

Alker, P., (2010), Red Wing Venation in Darters, *Atropos*, **40**: 49-51.

Boudot, J.-P., Kalkman, V.J., Azpilicueta Amorín, M., Bogdanovic, T., Cordero Rivera, A., Degabriele, G., Dommanget, J.-L., Ferriera, S., Garrigós, B., Jovic, M., Kotarac, M., Lopau, W., Marinov, M., Mihokovic, N., Riservato, E., Samraoui, B., & Schneider, W., (2009), Atlas of the Odonata of the Mediterranean and North Africa, *Libellula Supplement* **9**: 1-256.

Dijkstra, K-D. B. and Lewington, R., (2006), *Field Guide to the Dragonflies of Britain and Europe*, British Wildlife Publishing, Gillingham (Dorset), 320 pp.

Jödicke, R., (2006), *Ischnura elegans* Common Bluetail, in: Dijkstra, K-D. B. and Lewington, R., (2006), *Field Guide to the Dragonflies of Britain and Europe*, British Wildlife Publishing, Gillingham (Dorset), 320 pp.

Kalkman, V.J., (2005), On the distribution of the genus *Ceriagrion* Selys in the Balkans with *C. georgifreyi* Schmidt new for Europe. *Libellula, Supplement* **4**: 25-32.

Lopau, W., (1999), Bisher unveröffentlichte Libellenbeobachtungen aus Griechenland. *Libellula, Supplement* **2**: 91-131.

Lopau, W., (2000), Bisher unveröffentlichte Libellenbeobachtungen aus Griechenland II. *Libellula, Supplement* **3**: 81-116.

Lopau, W., (2006), Die Libellenfauna der Jonischen Inseln/Griechenland – Kefalloniá, Kérkira (Corfu), Lefkáda und Zákynthos, Libellen. *Naturkundliche Reiseberichte*, **32**: 3-37.

Lopau, W., (2010), Studien zur Libellenfauna Griechenlands IV, *Libellula, Supplement* **10**: 1-260.

Sutton, P.G., (2009), A checklist of the dragonflies (Odonata) of Corfu (Kérkira) including a new record for the Ionian Islands, the Black Pennant *Selysiothemis nigra* (Vander Linden, 1825), *Bull. Amat. Ent. Soc.*, **68**, (485): 136-144.



***Cybister tripunctatus* ssp. *africanus* Laporte, 1855, *Dytiscus mutinensis* (Pederzani, 1971), and other large water beetles in Corfu (Kérkira)**

by Dr Peter G. Sutton (7388)

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During a visit to Vatos in Corfu in 2007, three of Europe's largest species of water beetle were found in a large partially shaded pond: the Great Silver Water Beetle *Hydrophilus piceus* (Linnaeus, 1758), the King Diving Beetle *Dytiscus dimidiatus* Bergsträsser, 1778 and *Dytiscus mutinensis* Pederzani, 1971. The latter species, which was formerly thought to be the non-sulcate form of *Dytiscus dimidiatus* (ab. *mutinensis* Fiori 1881), has been recognised as a distinct species since the 1970's (e.g. Roughley, 1990), providing the basis for the discussion below.

In consecutive visits to Corfu in April 2011 and February 2012, two other large species, *Cybister (Scaphinectes) lateralimarginalis* (De Geer, 1774) and *Cybister (Cybister) tripunctatus* ssp. *africanus* Laporte 1855, were also recorded.

As a result of these finds it has been possible to recognise and correct two erroneous statements made in previous literature. The first, "All three *Hydrophilus* species have been recorded from the island (Corfu)" (Sutton, 2009), was based on inaccurate information which has not been substantiated. In fact, it appears that only one species, *Hydrophilus piceus*, has been recorded from Corfu (Robert Angus, pers. comm.). This is also corroborated by the known distribution of the other two Great Silver Water Beetles *Hydrophilus aterrimus* Eschscholz, 1822 and *Hydrophilus pistaceus* Laporte de Castelnau, 1840, as depicted on the PESI Portal website which is moderated by some of Europe's leading coleopterists (in this case, Ribera *et al.*). This site shows that while *H. aterrimus* and *H. pistaceus* are both found in Italy, neither species, apparently, extends into the Balkan region.

The second concerns a statement made in *The Larger Water Beetles of the British Isles* (Sutton, 2008) which describes *Cybister lateralimarginalis* as "...the only European member of a predominantly tropical genus". In fact, there are four *Cybister* species that can be found in Europe, but it is only *C. lateralimarginalis* that extends into north-western Europe (a prefix that would have corrected the above statement). Moving south and east into the Mediterranean region finds *Cybister tripunctatus* ssp. *africanus*¹, which is found across the Mediterranean region from Spain

¹ In addition to the European subspecies, *africanus*, there are three other subspecies of *Cybister tripunctatus* (Olivier, 1795): *C. t. lateralis* (Fabricius, 1798), *C. t. tripunctatus* (Olivier, 1795) and *C. t. temneki* Aubé, 1838, whose collective distributions range from southern Asia to Australia.)



and Portugal, through the western Mediterranean islands (Balearics, Sardinia, Corsica, Sicily), Italy and into the southern Balkan region including some Greek islands. The final two species have a far more restricted distribution. *Cybister (Melanectes) vulneratus* Klug, 1834 is a predominantly African species whose range extends into the Arabian Peninsula and Iraq. In Europe it is found in parts of Spain and has been recorded from Sicily. It is described as being part of the North African-European transition fauna (Ribera *et al.*, 1996). *Cybister (Cydister) senegalensis* Aubé, 1838 is even more restricted, with records from Sicily and Sardinia only (distribution data for these *Cybister* species is provided by Prof. Anders Nilsson, Fauna Europaea). Of the four species described,



Figure 1. *Cybister lateralimarginalis*, Ropa River, Vatos 14.ii.2012.



Figure 2. *Cybister tripunctatus* ssp. *africanus*, Gavrolimni ponds, 25.iv.2011.

two have been found by the author on Corfu: *C. laterimarginalis* (Figure 1) and *C. tripunctatus* ssp. *africanus* (Figure 2). The former has long been known from the island, and was noted by Dr Theodore Stephanides in his extensive work on the freshwater biology of Corfu (Stefanides, 1939) according to the following extract:

Genus *Cybister* Curtis

1. *Cybister laterimarginalis*² de Geer. Very common and plentiful in ponds. All the year.

Clearly, this species is not as common in Corfu as it once was. A specimen was taken from the flooded Ropa River at Vatos by the author in February 2012, but was not found during extensive searches elsewhere; and two other records have kindly been provided: one from Temploni in the 1980's (Professor Robert Angus, pers. comm.), and one from near Ag. Matheos in 1974 (Dr Hans Fery, pers. comm.) It is interesting to note that the meticulous Theodore Stephanides did not record this species, or any *Dytiscus* species from Corfu. It is certainly possible that in view of the climate-induced northward movement of a number of species in recent decades, at least one of the species, *C. tripunctatus* ssp. *africanus* may not have been there. *C. tripunctatus* ssp. *africanus* was taken from shallow temporary waters at

² Note *laterimarginalis* is now *lateralimarginalis* (per explanation in Sutton, 2008).



the southern end of Limni Korission by the author on 24.iv.2011, and then from the well-weeded shallows of a pond in Gavrolimni on 25.iv.2011. For a while, the record appeared to be the first for the island and it had (wrongly) been assumed that this might be linked to a recent climate-induced range expansion for this species, coinciding as it did with the first record of this species from one of the Balkan countries, Croatia, during the summer of 2007 (Temunovi and Šeri Jelaska, 2009).

However, Professor Angus again kindly provided details of his records, revealing that he had taken a specimen of *C. tripunctatus* ssp. *africanus* from a pond in Temploni in the 1980's.

In these days of northward range expansion by tropical species, nothing should be taken for granted, and this raises an obvious question regarding the identity of the *Cybister* species found in Corfu. Fortunately, the matter can be settled without difficulty. *Cybister lateralimarginalis* can be separated from the other species by its large size (30-37 mm) and the yellow colouration of its underside (Figure 3). *Cybister tripunctatus* ssp. *africanus* is the second largest species (23-32 mm) and has a rich glossy brown underside (Figure 4). *Cybister senegalensis* also has a brown underside and virtually a miniature version of the previous species, but being considerably smaller (17-21 mm)³, can be separated easily by size. *Cybister vulneratus* is also a relatively small species (26 mm) and can be separated from the other two species with brown undersides by the greatly reduced yellow margins on the sides of its elytra.



Figure 3 (left). *Cybister lateralimarginalis*, underside; Figure 4 (right). *Cybister tripunctatus* ssp. *africanus*, underside.

³ A very good side by side comparison of photographs of *C. senegalensis* and *C. tripunctatus* is provided in the dissertation by Reintjes (2004).



C. t. africanus was found amongst vegetation in warm shallow water on both occasions by the author. The specimen from the pond at Gavrolimni took to the air almost immediately after it had burst through the mat of algae in the net, leading to the following observation:

"The ponds at Gavrolimni were virtually impenetrable, surrounded by a dense thorny scrub that left any overzealous attempt to get to the waters edge requiring medical attention. On the two occasions that I found a path through to the pond I found its warm shallow waters teeming with life. The margins were green with occasionally dense patches of algae between the many scrubby branches and thin tree trunks that sprang from its tepid waters. There were beetles and dragonfly larvae aplenty and somewhere in the upper echelons of this food web was the large shining Cybister species that burst through the thick blanket of algae in my net as it continued to kick at the air in the dazzling midday sun. The large and hyperactive specimen was photographed but flew off loudly at the first opportunity after it had hoisted itself up onto the edge of the net."

In a short while, the strong-flying Cybister species that had disappeared out into the meadow flew back loudly past my ear, narrowly avoiding an instinctive swipe with my net, and I watched it as it made its way towards open water. Seven or eight yards out, there was a sudden cessation of noise as it folded its wings in mid-air, about a metre or so above the water, and it dropped like a stone into the pond with an audible 'plop'. I had not seen this behaviour before, and assumed it was a simple strategy to avoid folding wet wings."

This was not the only large water beetle that had colonised the temporary ponds at Gavrolimni, and a later diary extract reveals the presence of what must have been a healthy population of Great Silver Water Beetles:

"As I walked into some woodland at the edge of a clearing, I noticed a collection of large shining black elytra and legs scattered on the path (Figure 5). These were clearly from a Hydrophilus species and suggested that it was present in the Gavrolimni ponds in good numbers. I looked up into the tree above but saw no nest, roost or other signs of a winged predator. I looked closely at the ground for clues, but again, there were no obvious signs or tracks leading to this discarded inedible collection. I came to the conclusion that the predator must have been a bird of prey that had used the branch above as a temporary feeding station for beetles that it had caught on the wing, and recalled Jonty Denton's paper regarding his observations of Dytiscus predation by the Hobby Falco



subbuteo (Denton, 2007)⁴. It was interesting to note that all of the elytra were from one species and that whatever factor, e.g. the temperature of the increasingly shallow water, had provided the appropriate signal for the species to move en masse to another water body, appeared to be relevant only to that species, at that time.”



Figure 5. The collection of *Hydrophilus* remains in woodland adjacent to the Gavrolimni ponds.

The series of finds of large water beetles on Corfu prompted a number of questions, many of which were related to the cyclic movement of species between temporary and permanent water bodies. *Cybister* and *Hydrophilus* had been found together in temporary ponds that would be dry by late May, which at that time was four weeks away, and finding the strewn collection of elytrae on the woodland floor provided evidence that at least one species had already started to search for more permanent water bodies on the island⁵.

⁴ Denton writes: “On Thursley Common I once found the remnants (which had been discarded and carried to the shore by the prevailing breeze) of over twenty *Dytiscus marginalis* and seven *Dytiscus semisulcatus* along a 25 metre shore length in one afternoon. The occasional *Colymbetes fuscus* had also become a tasty in-flight meal.”

⁵ A very interesting dissertation by Reintjes (2004) highlights the importance of temporary waters regarding their faunal diversity which is “often higher than in permanent waters”, and the cyclic migration of species between temporary and permanent aquatic habitats.



***Dytiscus dimidiatus* Bergsträsser, 1778 and *Dytiscus mutinensis* (Pederzani, 1971) in Corfu**

The presence of *Dytiscus dimidiatus* in Corfu was noted in a previous publication (Sutton, 2009) and at that time, it was assumed that this was the only *Dytiscus* species present in the golf course ponds at Vatos. However, a communication between the author and Professor Angus regarding the remarkably abbreviated sulci of the female *D. dimidiatus* specimens (Figure 6) prompted a more detailed comparison with what was assumed to be the non-sulcate form of this species, *Dytiscus dimidiatus* ab. *mutinensis* Fiori 1881, taken at the same time from the pond at Vatos. Further discussion with Professor Garth Foster, who kindly provided reference to the work of Roughley (1990), highlighted the possibility of the non-sulcate form being a species in its own right, *Dytiscus mutinensis* Pederzani, 1971.



Figure 6. Female *Dytiscus dimidiatus* showing the highly abbreviated sulci and obviously green colouration of specimens from the pond at Vatos.

Roughley's extensive work, "A systematic revision of species of *Dytiscus* Linnaeus (Coleoptera: Dytiscidae). Part 1. Classification based on adult stage", notes Franciscolo's (1979) reservations about the species-level separation of *D. mutinensis* from *D. dimidiatus*, notably highlighting the



inconsistencies regarding the number of punctures present on the male metatarsomere⁶, a key feature used by Pederzani (1971) to distinguish between the two species. Nevertheless, Roughley goes on to make the following assertion:

"I have maintained the separation of these taxa as species for the following reasons: 1, consistent, if slight differences in the shape of the median lobe for males; 2, information provided by Franciscolo (1979) that specimens assignable to both taxa were taken in the same ponds; and 3, a lack of indeterminate specimens among the limited sample I have seen."

The specimens of *D. mutinensis* from Vatos are consistent (with the exception of yellow-rimmed eyes) with the description of this species provided by the Italian Ermesambiente web-site:

"Length 28.0-35.0 mm. Body shape elongated oval, convex, rounded at sides. Elytra always smooth in both sexes with slight lateral expansions in the back half. Dorsal colouration blackish-brown, with greenish or greenish-brown velvety auburn; sides of pronotum with a broad yellow band which opens up towards the apex of the elytrae with two irregular bifurcations. Head with v-shaped reddish central spot, yellow-rimmed eyes".

It is interesting to note that this description includes the thin yellow margin around the eyes, and indeed, shows a photograph of a specimen where this appears to be the case, yet this feature is not mentioned in descriptive information elsewhere, and is notably absent in the dorsal view of *D. mutinensis* provided by Roughley (*loc. cit.*). The *D. mutinensis* specimens from the Vatos pond did not have yellow-rimmed eyes.

It was noted from the author's observations that this form appeared to be slightly smaller, and had an obviously different colouration in accordance with the above description. This colour difference can be seen clearly when comparing the greener female (Figure 6) and male (Figure 7) specimens of the larger (32-39 mm) *D. dimidiatus* specimens, with the brown *D. mutinensis* female (Figure 8). It also appeared to conform to the more oblong shape (although no specific measurements were taken) described in Roughley's key:

Body oblong (TL/GW 1.98 to 2.00); male with protarsomere V about 1.3 length of longer claw and about 30 punctures on anterior surface; smaller specimens, 28 to 35 mm; distributed in Italy, Corfu, Yugoslavia

D. mutinensis Pederzani

⁶ There seems to be a discrepancy in the paper, where metatarsomere V is later referred to as the protarsomere V in the key provided.



Figure 7. Male *Dytiscus dimidiatus*, showing green colouration, Vatos



Figure 8. Female *Dytiscus mutinensis* showing typically brown colouration, Vatos



Body more elongate (TL/GW 1.84 to 1.95); male with protarsomere V about 1.5 length of longer claw and about 60 punctures on anterior surface; larger specimens, 32 to 39 mm; distributed from Europe to Transcaucasia, Asia Minor, Syria

D. dimidiatus Bergsträsser

In accordance with Roughley's second point, all specimens came from the same pond at Vatos (Figure 9).



Figure 9. The shaded golf course pond at Vatos where specimens of *Dytiscus dimidiatus*, *Dytiscus mutinensis* and *Hydropilus piceus* were taken, well-weeded and rich in leaf litter and detritus.



Pederzani (1971) notes that *D. mutinensis* has a preference for lentic habitats (e.g. still ponds, lakes, swamps) with much detritus, with adults occurring in both open and shaded habitats, but locally. The underside of the female *D. mutinensis* specimen is shown in Figure 10.



Figure 10. Underside of *Dytiscus mutinensis* female, showing dark colouration and comparatively blunt postcoxal processes.

Roughley provides additional information regarding the *D. mutinensis* sample studied, including details of specimens from Corfu:

'I saw slight variation in external features of adults in 12 specimens of D. mutinensis. Of the five males examined in detail, number of punctures on the anterior surface of protarsomere V ranged between 24 and 34. Presence or absence of the anterior yellow band of the pronotum varies,



but when present, this band is quite narrow, in most less than 10% of width of lateral bands. Two of the four females from Corfu have slightly impressed grooves."

Professor Angus also alerted the author to the work of Dr Hans Fery, who kindly provided another record of *Dytiscus mutinensis* from Corfu taken near Ag. Matheos in 1974 (Hans Fery, pers. comm., 26.iv.12). (Professor Angus's paper on the water beetles of Corfu, which will include the records of Dr Fery and other workers, will be published in *Latissimus – Newsletter of the Balfour-Browne Club*, in due course.)

A recent communication with Dr Lars Hendrich (pers. comm., 30.iv.12) added one final twist to this tale:

"I have seen the two photos you have sent to Hans. The female on one photo shows reduced striae and could belong to mutinensis, too. The true mutinensis is smaller and more elongate than dimidiatus and all females are without striae. There are also some differences in the colour of the ventral side. On the other hand I have studied a series of "dimidiatus (??)" from the Camargue and all females have the same elytra as your female from Corfu.

We have true mutinensis from Peloponnese in alcohol and want to extract the DNA quite soon. There are a lot of COX1 sequences from dimidiatus from Central Europe in Genbank or better in the lab of Johannes Bergsten and by comparing them I hope we will find something. Probably mutinensis is just a mediterranean subspecies of dimidiatus and in the intermediate zone you have mixed populations. The ones from Peloponnese (10 specimens, by Hans and me) and the one from Italy sent to me by Pederzani are easy to separate from the numerous dimidiatus I have from Germany and Austria."

It is therefore likely that confirming the justification for separating *Dytiscus mutinensis* from *Dytiscus dimidiatus* will only be resolved by an appropriate DNA study.

Acknowledgements

Sincere thanks to Prof. Garth Foster, Prof. Robert Angus, Dr Hans Fery and Dr Lars Hendrich, without whom this paper would not have been possible.

References

Denton, J., (2007). *Water Bugs and Water Beetles of Surrey*. Surrey Wildlife Trust, Pirbright, Surrey. 200 pp., 32 colour plates, distribution maps.
Ermesambiente website: http://ermesambiente.it/wcm/parchi/pagine/fauna_minore/Insetti_Coleoptera/dytiscidae



Franciscolo, M.E., (1979). *Fauna d'Italia, 14. Coleoptera: Haliplidae, Hygrotidae, Gyrinidae, Dytiscidae*. Ed. Calderini, Bologna, vi + 804 pp.

Nilsson, A.N., *Cybister (Scaphinectes) lateralimarginalis* (De Geer, 1774), *Cybister (Cybister) tripunctatus* (Olivier, 1795), *Cybister (Melanectes) vulneratus* Klug, 1834, *Cybister (Cybister) senegalensis* Aubé, 1838, accessed through Fauna Europaea at: <http://www.faunaeur.org> (30.x.2011)

Pederzani, F., (1971). Il *Dytiscus dimidiatus* Bergstr. var. *mutinensis* Fiori elevato al rango de specie. *Bulletino della Società Entomologica Italiana*, **103**: 219-224.

Reintjes, N., (2004). *Taxonomy, faunistics and life-history traits of Dytiscidae and Noteridae (Coleoptera) in a West African savannah*, Dissertation zur Erlangung des naturwissenschaftlichen Doktorgrades der Bayerischen Julius-Maximilians-Universität Würzburg. 1-127 pp.

Ribera, I., Bilton, D.T., Aguilera, P. and Foster, G.N., (1996). A North-African-European transition fauna: water beetles (Coleoptera) from the Ebro delta and other Mediterranean coastal wetlands in the Iberian Peninsula. *Aquatic Conservation: Marine and Freshwater Ecosystems*, **6**: 121-140.

Ribera, I., Ribera, H. and Hansen, M., *Hydropphilus (Hydropphilus) piceus*, (Linnaeus, 1758), *Hydropphilus (Hydropphilus) aterrimus* Eschscholtz, 1822, *Hydropphilus (Hydropphilus) pistaceus* Laporte de Castelnau, 1840, accessed through Fauna Europaea at: <http://www.faunaeur.org> (05.iv.2012)

Roughley, R., (1990). A systematic revision of species of *Dytiscus* Linnaeus (Coleoptera: Dytiscidae). Part 1. Classification based on adult stage. *Quaestiones Entomologicae*, **26**: 383-557.

Stephanides, T., (1939). *A survey of the freshwater biology of Corfu and of certain other regions of Greece*, Christou, Athens.

Sutton, P.G., (2008). *The Larger Water Beetles of the British Isles*, The Amateur Entomologists' Society, Orpington, England. pp. 1-78, 5 colour plates, 31 text figures, 10 distribution maps.

Sutton, P.G., (2009). A selection of beetles (Coleoptera) from the island of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **68**, No. 485, pp.145-151.

Temunović, M. and Šeri Jelaska, L., (2009). First record of diving beetle *Cybister tripunctatus africanus* Laporte, 1835 in the Croatian Hydradephagan fauna, in: Communications and abstracts, Soldán T. et al., Biological Centre, Academy of Sciences of the Czech Republic, Institute of Entomology. 85 (ISBN: 978-80-7394-167-3).





A revised checklist of the butterflies (Rhopalocera) of Corfu (Kérkira)

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Introduction

Since the publication of a checklist for the butterflies (Rhopalocera) of Corfu, (Sutton, 2009) a number of significant changes have been made to that list. This process has been aided by the recent publication of several books, which have provided confirmation of the status of certain species in the Mediterranean region of Europe: Pamperis, L.N., (2009); Kudrna *et al.* (2011); Tshikolovets, (2011).

The tabulated checklist provides details of sightings from a number of recent recorders and changes made to the previous list are explained below.

Table 1. A revised checklist of the butterflies of Corfu (Kérkira)

Date Key: Baldock & Bretherton: 1980-81; Parker: 1995-2008;
Hall/Russell/Mandziejewicz: 2003-4; Vrabec: 2001-2002; Sutton: 2001-12

	Baldock & Bretherton	Parker	Vrabec	Hall/ Russell/ Mandziejewicz	Sutton	Additional comments
Papilionidae						
Swallowtail <i>Papilio machaon</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Southern Swallowtail <i>Papilio alexanor</i> (Esper [1800])		✓		✓	✓	
Scarce Swallowtail <i>Iphiclides podalirius</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Southern Festoon <i>Zerynthia polyxena</i> ([Denis and Schiffmüller], 1775)				✓	✓	A
Pieridae						
Large White <i>Pieris brassicae</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Small White <i>Artogeia rapae</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Southern Small White <i>Artogeia manni</i> (Mayer, 1851)	✓	✓	✓	✓		
Mountain Small White <i>Artogeia ergane</i> (Gayer, 1828)						B
Green-veined White <i>Artogeia napi</i> (Linnaeus, 1758)	✓	✓		✓	✓	
Krueper's Small White <i>Artogeia krueperi</i> (Staudinger, 1860)	✓	✓	✓	✓		
Eastern Bath White <i>Pontia edusa</i> (Fabricius, 1777)/ Bath White <i>Pontia daplidice</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	C
Eastern Dappled White <i>Euchloe ausonia</i> (Hübner, [1804])		✓		✓		
Orange Tip <i>Anthocharis cardamines</i> (Linnaeus, 1758)	✓			✓	✓	



	Baldock & Bretherton	Parker	Vrabc	Hall/ Russell/ Mandziewicz	Sutton	Additional comments
Eastern Orange Tip <i>Anthocharis damone</i> (Boisduval, 1836)		✓		✓	✓	D
Clouded Yellow <i>Colias crocea</i> (Geoffroy in Fourcroy, 1785)	✓	✓	✓	✓	✓	
Brimstone <i>Gonepteryx rhamni</i> (Linnaeus, 1758)			✓	✓	✓	
Cleopatra <i>Gonepteryx cleopatra</i> (Linnaeus, 1767)	✓	✓	✓	✓	✓	
Wood White <i>Leptidea sinapis</i> (Linnaeus, 1758)		✓		✓	✓	
Lycaenidae						
Purple Hairstreak <i>Quercusia quercus</i> (Linnaeus, 1758)						E
Sloe Hairstreak <i>Satyrium acaciae</i> (Fabricius, 1787)			✓	✓	✓	
Ilex Hairstreak <i>Satyrium ilicis</i> (Esper, 1779)				✓	✓	
Blue-spot Hairstreak <i>Satyrium spini</i> ([Denis and Schiffmüller, 1775])						F
Green Hairstreak <i>Callophrys rubi</i> (Linnaeus, 1758)	✓	✓		✓	✓	
Small Copper <i>Lycaena phlaeas</i> (Linnaeus, 1761)	✓	✓		✓	✓	
Grecian Copper <i>Lycaena ottomanica</i> (Lefebvre, 1830)						G
Purple-shot Copper <i>Lycaena alciphron</i> (Rottemburg, 1775)						H
Lesser Fiery Copper <i>Lycaena thersamon</i> (Esper, 1784)						I
Long-tailed Blue <i>Lampides boeticus</i> (Linnaeus, 1767)	✓	✓	✓	✓	✓	
Lang's Short-tailed Blue <i>Leptotes pirithous</i> (Linnaeus, 1767)	✓	✓				
Little Tiger Blue <i>Tarucus balkanicus</i> (Freyer, [1844])	✓	✓				
Geranium Bronze <i>Cacyreus marshalli</i> Butler, 1898		✓				J
Grass Jewel <i>Chilades trochylus</i> (Freyer, [1845])						K
Small Blue <i>Cupido minimus</i> (Fuessly, 1775)			✓			
Holly Blue <i>Celastrina argiolus</i> (Linnaeus, 1758)		✓		✓	✓	
Green-underside Blue <i>Glaucoopsyche alexis</i> (Poda, 1761)	✓	✓		✓	✓	
Eastern Baton Blue <i>Pseudophilotes vicrama</i> (Moore, 1865)					✓	L
Silver-studded Blue <i>Plebejus argus</i> (Linnaeus, 1758)						M
Brown Argus <i>Aricia agestis</i> ([Denis and Schiffmüller], 1775)	✓	✓	✓	✓	✓	
Chapman's Blue <i>Agrodiaetus thersites</i> (Cantener, 1835)				✓	✓	
Common Blue <i>Polyommatus icarus</i> (Rottemburg, 1775)	✓	✓	✓	✓	✓	
Mazarine Blue <i>Polyommatus semiargus</i> (Rottemburg, 1775)				✓		N
Libytheidae						
Nettle-tree Butterfly <i>Libythea celtis</i> (Laicharting, 1782)					✓	O



	Baldock & Bretherton	Parker	Vrabc	Hall/Russell/Mandziejewicz	Sutton	Additional comments
Danaidae						
Plain Tiger <i>Danaus chrysippus</i> (Linnaeus, 1758)					✓	
Nymphalidae						
Two-tailed Pasha <i>Charaxes jasius</i> (Linnaeus, 1767)					✓	
Southern White Admiral <i>Limenitis reducta</i> (Staudinger, 1901)	✓	✓	✓	✓	✓	
Camberwell Beauty <i>Nymphalis antiopa</i> (Linnaeus, 1758)	✓					
Large Tortoiseshell <i>Nymphalis polychloros</i> (Linnaeus, 1758)	✓		✓	✓	✓	
Peacock Butterfly <i>Inachis io</i> (Linnaeus, 1758)	✓			✓	✓	
Red Admiral <i>Vanessa atalanta</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Painted Lady <i>Vanessa cardui</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Small Tortoiseshell <i>Aglais urticae</i> (Linnaeus, 1758)						P
Comma Butterfly <i>Polygonum c-album</i> (Linnaeus, 1758)	✓			✓	✓	
Southern Comma <i>Polygonum egea</i> (Cramer, [1775])	✓	✓	✓	✓	✓	
Cardinal <i>Argynnis pandora</i> ([Denis and Schiffelmüller], 1775)	✓			✓	✓	
Silver-washed Fritillary <i>Argynnis paphia</i> (Linnaeus, 1758)	✓		✓		✓	
Queen of Spain Fritillary <i>Issoria lathonia</i> (Linnaeus, 1758)					✓	
Glanville Fritillary <i>Melitaea cinxia</i> (Linnaeus, 1758)	✓	✓		✓	✓	
Knapweed Fritillary <i>Melitaea phoebe</i> ([Denis and Schiffelmüller], 1775)						Q
Spotted Fritillary <i>Melitaea didyma</i> (Esper, 1778)	✓	✓	✓	✓	✓	
Satyridae						
Balkan Marbled White <i>Melanargia larissa</i> (Geyer, [1828])	✓	✓	✓	✓	✓	
Eastern Rock Grayling <i>Hipparchia syriaca</i> (Staudinger, 1871)	✓	✓	✓	✓		
Woodland Grayling <i>Hipparchia fagi</i> (Scopoli, 1763)						R
Delattin's Grayling <i>Hipparchia volgensis</i> (Mazochin-Porshnjakov, 1952)	✓	✓	✓	✓	✓	S
Tree Grayling <i>Neohipparchia statilinus</i> (Hufnagel, 1766)	✓	✓				
Great Banded Grayling <i>Kanetisa (Brintesia) circe</i> (Fabricius, 1775)			✓		✓	
Meadow Brown <i>Maniola jurtina</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Oriental Meadow Brown <i>Hyponomeuta lupina</i> (Costa, 1836)						T
Southern Gatekeeper <i>Pyronia cecilia</i> (Vallantin, 1894)						U
Small Heath <i>Coenonympha pamphilus</i> (Linnaeus, 1758)	✓	✓	✓		✓	
Speckled Wood <i>Pararge aegeria</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	



	Baldock & Bretherton	Parker	Vrabelc	Hall/ Russell/ Mandziejewicz	Sutton	Additional comments
Wall Brown <i>Lasiommata megera</i> (Linnaeus, 1767)	✓	✓	✓	✓	✓	
Large Wall Brown <i>Lasiommata maera</i> (Linnaeus, 1758)	✓	✓	✓	✓	✓	
Lattice Brown <i>Kirinia roxelana</i> (Cramer, [1777])	✓			✓	✓	
Hesperiidae						
Grizzled Skipper <i>Pyrgus malvae</i> (Linnaeus, 1758)					✓	V
Orbed Red-underwing Skipper <i>Spialia orbifer</i> (Hübner, [1823])		✓	✓			
Sage Skipper <i>Muschampia proto</i> (Ochsenheimer, 1808)	✓	✓		✓		
Mallow Skipper <i>Carcharodus alceae</i> (Esper, 1780)	✓	✓		✓	✓	
Oriental Marbled Skipper <i>Carcharodus orientalis</i> (Reverdin, 1913)	✓	✓		✓		W
Inky Skipper <i>Erynnis marloyi</i> (Boisduval, [1834])	✓					
Lulworth Skipper <i>Thymelicus acteon</i> (Rottemburg, 1775)		✓			✓	X
Small Skipper <i>Thymelicus sylvestris</i> (Poda, 1761)	✓		✓	✓	✓	
Large Skipper <i>Ochlodes sylvanus</i> (Esper, 1777)		✓		✓	✓	Y
Pigmy Skipper <i>Gegenea pumilio</i> (Hoffmannsegg, 1804)	✓	✓				

An explanation of changes to the previous checklist (Sutton, 2009), and confirmation of records for previously known species

A. Southern Festoon *Zerynthia polyxena* ([Denis and Schiffmüller], 1775) The paper by Baldock and Bretherton (1981) highlighted a number of species whose ongoing presence in Corfu required confirmation, including the Southern Festoon, for which there appeared to be no modern records: "In the absence of later records of this conspicuous species, confirmation of its presence in Corfu is needed." The authors also state that the almost century old April record in question referred to, "a dark yellow female of the ab. *ochracea* Stgr."

During one of my visits to Corfu, my good friend, Dr Spiros Giourgas, had put me in touch with Mr Stamatis Ghinis, and we went to visit him in Corfu Town. Mr Ghinis is a well-recognised naturalist on the island with a particular interest in butterflies. After showing me a dried juvenile 4-Lined Snake that had come into his possession, he proceeded to show me his impressive collection of digital images of the butterflies and moths of the island. At that point, a spectacular image of the Southern Festoon flashed up on his computer screen and I was unable to contain my excitement at the prospect of finding it on the island. "Where did



you find that?" I blurted out, as I pointed to the screen. "In the mountains near Scripero" came the translated reply from his colleague. On my next visit I allocated a whole day to the pursuit of this exquisite butterfly and planned to visit the area in the middle of the week. In the meantime, (21.iv.2011) I had some unfinished business near Spartera in the south of the island pursuing Mole Crickets. To cut a long story short, whilst walking along a sparsely wooded track, a Southern Festoon appeared before me in the shafts of sunlight as the sun met the tree line at the end of the afternoon (Figure 1). Luckily for me, not so for the specimen, it appeared to have had trouble emerging from its chrysalis, and the tips of its wings were somewhat crumpled. This allowed me to get a close look at one of the most beautiful species that Corfu had to offer, and did not diminish the flashing blue iridescence of its wing scales. The yellow hue of the wing was fairly dark, suggesting that it was *f. ochracea*.



Figure 1. Southern Festoon *Zerynthia polyxena* ([Denis and Schiffmüller], 1775)



I few days later (21.iv.2011), whilst trying to find the impressive crested newt *Triturus carnifex* ssp. *macedonicus*, I came across another specimen near Temploni in the Ropa Valley, although I did not recognise it at first. The recent torrential downpours appeared to have washed every scale from its wings, leaving it but a pencil drawing of its former gaudy self (Figure 2). A recent communication with Peter Russell revealed that this species had also been found at two locations: in the northern mountains (15.iv.2004), and again in the Ropa Valley (17.iv.2004).

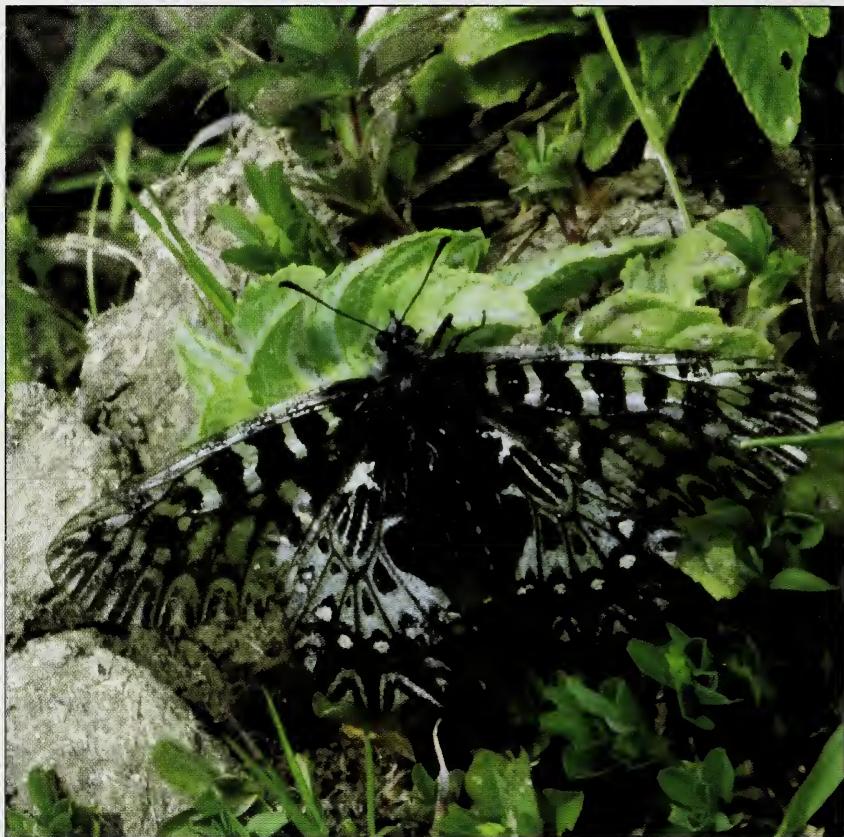


Figure 2. Southern Festoon *Zerynthia polyxena* ([Denis and Schiffelmüller], 1775)

B. Mountain Small White *Artogeia ergane* (Gayer, 1828)

Found by Peter Taylor (per Parker, 1996) and presence confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009, several records).



C. Eastern Bath White *Pontia edusa* (Fabricius, 1777)/ Bath White *Pontia daplidice* (Linnaeus, 1758)

It has not been possible to separate these species, which are both migratory and can interbreed. The following summaries exemplify the problems faced regarding the taxonomy of these species:

“Specimens from different populations cannot be separated on a morphological basis, and the recent split of the species based on allozyme differences causes additional taxonomic problems with old taxa. It is not possible to solve the status of the approximately 30 described taxa.” Tshikolovets, (2011)

“They are morphologically indistinguishable and interbreed within a narrow contact belt. Both species are migrants and their distribution data cannot be distinguished from each other.” Kudrna, et al. (2011)

D. Eastern Orange Tip *Anthocharis damone* (Boisduval, 1836)

This species was added to the Corfu list by Showler (1984) and later found by Parker (1996). Figure 3 shows a specimen found in a mountain valley in the north-eastern part of the island.



Figure 3. Eastern Orange Tip *Anthocharis damone* (Boisduval, 1836)



E. Purple Hairstreak *Quercusia quercus* (Linnaeus, 1758)

Found by Peter Taylor (per Parker, 1996) and presence confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009, several records).

F. Blue-spot Hairstreak *Satyrium spini* ([Denis and Schiffelmüller], 1775)

Not found by list of recorders but records confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).

G. Grecian Copper *Lycaena ottomana* (Lefebvre, 1830)

As above.

H. Purple-shot Copper *Lycaena alciphron* (Rottemburg, 1775)

As above.

I. Lesser Fiery Copper *Lycaena thersamon* (Esper, 1784)

Found by Peter Taylor (per Parker, 1996) and presence confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).

J. Geranium Bronze *Cacyreus marshalli* Butler, 1898

New species (Parker, 2010).

K. Grass Jewel *Chilades trochylus* (Freyer, [1845])

New species (per Pamperis, 2009).

L. Eastern Baton Blue *Pseudophilotes vicrama* (Moore, 1865)

The Baton Blue *Pseudophilotes baton* (Bergsträsser, 1779) has been removed from the Corfu list in accordance with known European distribution of this species. It is replaced in Eastern Europe and the Balkan region by the Eastern Baton Blue *Pseudophilotes vicrama* (Figures 4 and 5).

M. Silver-studded Blue *Plebejus argus* (Linnaeus, 1758)

Not found by list of recorders but records confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009, two records).

N. Mazarine Blue *Cyaniris semiargus* Dalman 1816 (previously *Polyommatus semiargus* (Rottemburg, 1775))

New species added by Hall, D. and Russell, P.J.C., Mandziejewicz, R., (2003).



Figure 4. Eastern Baton Blue *Pseudophilotes vicrama*.

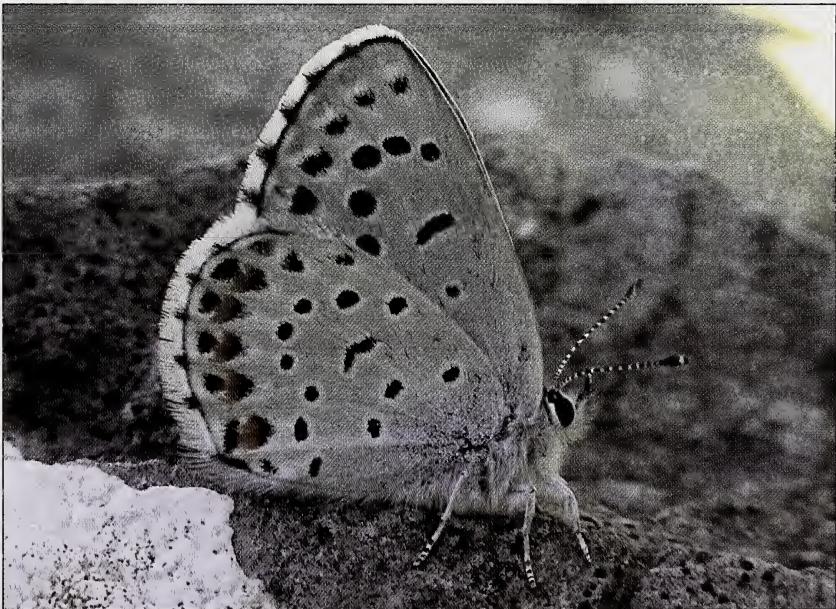


Figure 5. Eastern Baton Blue *Pseudophilotes vicrama*.



O. Nettle-tree Butterfly *Libythea celtis* (Laicharting, 1782)

“..confirmation for Corfu desirable” (Baldock and Bretherton, 1981). This species was found by Hall and Russell (25-31.v.2003) at three different locations on the island (P.Russell, pers. comm.). Records also confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).

P. Small Tortoiseshell *Aglais urticae* (Linnaeus, 1758)

Not found by list of recorders but records confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009, two records).

Q. Knapweed Fritillary *Melitaea phoebe* ([Denis and Schiffelmüller], 1775)

As above.

R. Woodland Grayling *Hipparchia fagi* (Scopoli, 1763)

This species shares its range with *Hipparchia syriaca*, presence in Corfu (with appropriate explanation) confirmed in Pamperis (2009, several records).

S. Delattin's Grayling *Hipparchia volgensis* (Mazochin-Porshnjakov, 1952)

The Grayling *Hipparchia semele* (Linnaeus, 1758) has been removed from list. Kudrna had re-examined his original material (a basis for including *semele* on the original list) and concluded that they were consistent with *volgensis* (Figure 6).

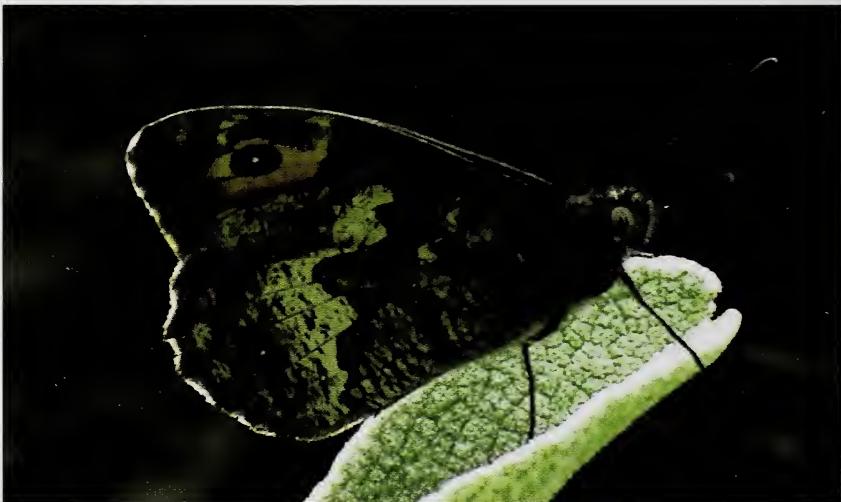


Figure 6. Delattin's Grayling *Hipparchia volgensis* (Mazochin-Porshnjakov, 1952).

T. Oriental Meadow Brown *Hyponomeuta lupina* (Costa, 1836)

First recorded by Dennis in 1990 (per Parker, 1996). Records also confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009, several records).

U. Southern Gatekeeper *Pyronia cecilia* (Vallantin, 1894)

Not found by list of recorders but records confirmed by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).

V. Grizzled Skipper *Pyrgus malvae* (Linnaeus, 1758)

Added to Corfu list by McLean (1983), recorded by Sutton (2009, Figure 7), Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).



Figure 7. Grizzled Skipper *Pyrgus malvae* (Linnaeus, 1758)

W. Oriental Marbled Skipper *Carcharodus orientalis* (Reverdin, 1913)

The above species replaces the Marbled Skipper *Carcharodus lavatherae* (Esper, 1783) in the southern Balkan region and the Marbled Skipper has therefore been removed from the Corfu list. Its presence is not confirmed



by Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009) and general consensus is that Marbled Skipper records for Corfu are doubtful.

X. Lulworth Skipper *Thymelicus acteon* (Rottemburg, 1775)

Found recently by Sutton (Figure 8), and Hall *et al.* (P. Russell, Pers. Comm.), also confirmed in Kudrna, *et al.* (2011), Tshikolovets, (2011), and Pamperis (2009).

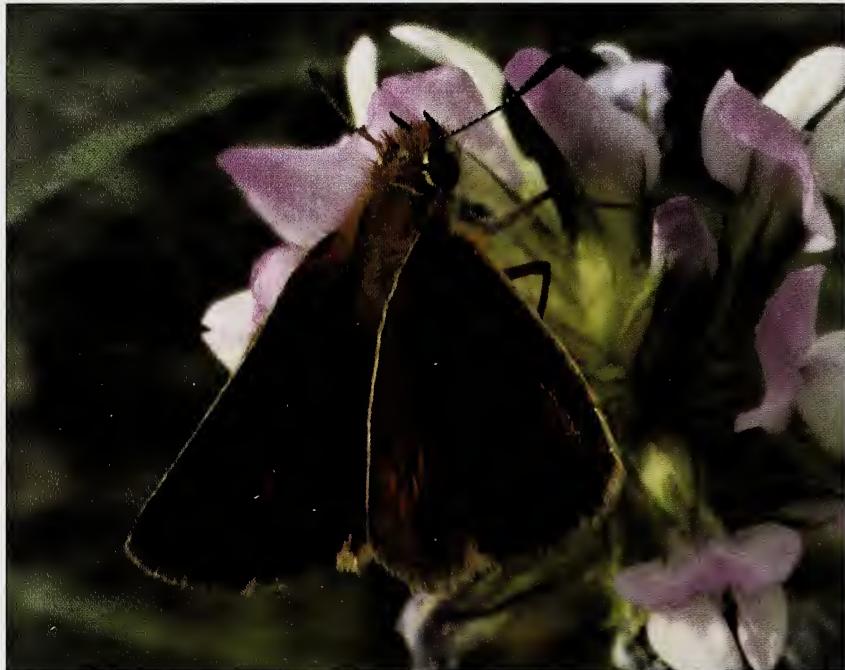


Figure 8. Lulworth Skipper *Thymelicus acteon* (Rottemburg, 1775), Agios Gordis, 2007.

Y. Large Skipper *Ochlodes sylvanus* (Esper, 1777)

Kudrna *et al.* (2011) put the point succinctly, "Ochlodes sylvanus (Esper, 1777) is the valid name for the distinct Palaearctic species formerly considered conspecific with the Eastern-Asiatic *Ochlodes venatus* (Bremer & Grey, 1853); their ranges overlap in the Far East, esp. in Korea and Sakhalin."

Conclusion

The checklist of butterflies for Corfu now lists 85 species. The following species have been added to the list: Geranium Bronze *Cacyreus*



marshalli, Grass Jewel *Chilades trochylus*, Mazarine Blue *Cyaniris semiargus* and Woodland Grayling *Hipparchia fagi*.

The following species have been removed from the checklist: Baton Blue *Pseudophilotes baton*, Grayling *Hipparchia semele* and Marbled Skipper *Carcharodus lavatherae*.

Acknowledgements

I am indebted to those previous workers who progressively built the foundation for a comprehensive checklist for Corfu, and to those who have actively assisted in the revision of that checklist: Rob Parker, Peter Russell, Vladimir Vrabec, Stamatios Ghinis, David Baldock, (the late) R. Bretherton, Peter Taylor, David Hall, Robert Mandziejewicz, Alain Olivier and Matt Rowlings.

References

Baldock, D.W. and Bretherton, R., (1981). Butterflies in Corfu (Kerkyra) in late August with a provisional list of all species known from it. *Trans. Br. Ent. Nat. Soc.*, **14**: 8-10 & 101-107.

Beneš, J., Konvička, M., Dvořák, J., Fric, Z., Havelda, Z., Pavláčko, A., Vrabec, V., Weidenhofer, Z., (Eds.) (2002). *Butterflies of the Czech Republic: Distribution and Conservation I, II*. SOM, Praha, 857 pp.

Hall, D. and Russell, P.J.C., Mandziejewicz, R., (2003). Two new butterfly records from the Greek island of Corfu in May 2003. *The Entomologist's Record and Journal of Variation*, **115**: 287-288.

Kudrna, O., Harpke, A., Lux, K., Pennerstorfer, J., Schweiger, O., Settele, J. & Wiemers, M., (Eds.) (2011), *Distribution Atlas of Butterflies in Europe*. Gesellschaft für Schmetterlingschutz, Halle, Germany, 576 pp.

Lipscomb, C.G., (1977). Corfu Butterflies in Spring 1977, *Ent. Rec. J. Var.*, **89**: 326-328.

McLean, I.F.G., (1983). Spring Butterflies in Corfu. *Proc. Trans. Br. Ent. Nat. Hist. Soc.*, **16** (983): 53-54.

Pamperis, L.N., (2009). *The Butterflies of Greece*. (2nd edition), Editions Pamperis, Athens. 766 pp.

Parker, R., (1996). *Pieris mannii* and other animals on Corfu in May 1995, *Bull. Amat. Ent. Soc.*, **55** (407): 175-183 & 254-255.

Parker, R., (2010). *Cacyreus marshalli* Butler, 1898, newly recorded for Corfu, with notes on other butterflies on the island in 2008. *Entomologist's Gaz.*, **61**: 40-42.

Perkovic, D., (2006). *Danaus chrysippus* (Linnaeus, 1758) (Lepidoptera, Nymphalidae, Danainae), a new species in the fauna of Croatia. *Nat. Croat.*, **15** (1-2): 61-64.

Showler, A.J., (1984). Further Records of Spring Butterflies in Corfu. *Proc. Trans. Br. Ent. Nat. Hist. Soc.*, **17**: 30.

Sutton, P.G., (2009). A checklist of the butterflies (Rhopalocera) of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **68** (485): 130-135.

Tshikolovets, V.V., (2011). *Butterflies of Europe and the Mediterranean Area*, Tshikolovets Publications, Pardubice. 544 pp.

Vanholder, B., (1993). *Danaus chrysippus* (Linnaeus, 1758) en andere trekvlinders op Kerkira (Corfu), *Phegea*, **21** (2): 44.

Willemse, L., (1981). More about the distribution of Lepidoptera (Rhopalocera) in Greece, *Ent. Bericht*, **41**: 41-48.

Withrington, D., (1995). Corfu in late September – Butterflies. *Bull. Amat. Ent. Soc.*, **54**: 255.



Figure 9. Male Orange Tip *Anthocharis cardamines*, near Spartera.



Figure 10. Female Cleopatra *Gonepteryx cleopatra*, Gavrolimni.



Figure 11. Ilex Hairstreak *Satyrium ilicis*, Agios Gordis.



Figure 12. Green-underside Blue *Glaucopsyche alexis*, Acharavi.



Figure 13. Underside, Southern Comma *Polygonum egea*, Agios Gordis.



Figure 14. Southern Comma *Polygonum egea*, Agios Gordis.



Figure 15. Glanville Fritillary *Melitaea cinxia*, near Temploni.



Figure 16. Balkan Marbled White *Melanargia larissa*, Vinglatouri.

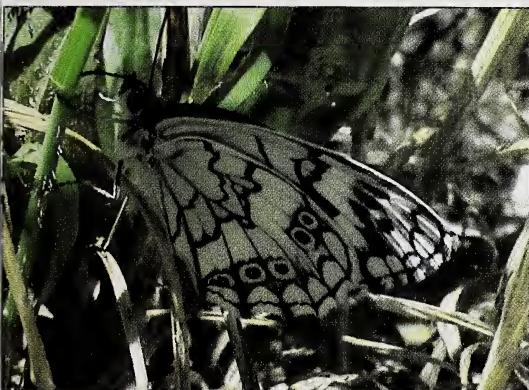


Figure 17. Underside, Balkan Marbled White *Melanargia larissa*, Vinglatouri.



Figure 18. Meadow Brown *Maniola jurtina*, Temploni.



Figure 19. Lattice Brown *Kirinia roxelana*, Ropa Valley.



Figure 20. Small Skipper *Thymelicus sylvestris*, Acharavi.



Oxythyrea cinctella (Schaum, 1841) and other members of the Cetoniidae from Corfu (Kérkira)

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Introduction

There appears to be a tendency to label any chafer with white spots on a black background as *Oxythyrea funesta*, which is not unreasonable in Western Europe as it is the only species likely to be encountered. However, the picture regarding these black and white chafers becomes more complex as you travel eastwards, with several more species appearing in the eastern Mediterranean and eastern European countries. A case in point is provided by one popular photoguide which describes *Oxythyrea funesta* using an image of *Oxythyrea cinctella*. The genus, *Tropinota*, is also there to muddy the waters, and as yet, there is little in the way of an adequate identification guide to alert the wandering entomologist to these possibilities. Corfu provides an opportunity to enter into this world of uncertainty, and is home to several species that need a keen eye to separate in the field.

There are a number of *Oxythyrea* species that may be encountered in eastern countries and Mediterranean islands:

Oxythyrea abigail Reiche and Saulcy, 1856

Oxythyrea albopicta (Motschulsky, 1845)

Oxythyrea cinctella (Schaum, 1841)

Oxythyrea dulcis Reitter, 1899

Oxythyrea funesta (Poda, 1761)

Oxythyrea noemi Reiche and Saulcy, 1856

Of these, *Oxythyrea cinctella* (Figure 1) and *Oxythyrea funesta* (Figure 2) are present in Corfu. There appears to be an outside chance of encountering *Oxythyrea albopicta* and *Oxythyrea dulcis* on account of their known distribution in Greece, but not *Oxythyrea abigail* or *Oxythyrea noemi*, which occur from Cyprus eastwards.

Tropinota hirta (Poda, 1761) (Figure 3) has also been encountered on the island, together with a number of other chafers including *Eulasia pareyssei* and the huge *Potosia aeruginosa* (Sutton: 2009, 2010). Two more can be added to that list: *Haplidia transversa* (Fabricius, 1801) (Figure 4), and what appears to be an *Anisoplia* sp. (Figure 5). *Anisoplia villosa* immediately sprang to mind when I encountered this species at



Figure 1. *Oxythyrea cinctella*, Ropa Valley – April 2011.



Figure 2. *Oxythyrea funesta*, Kavos – May 2008.



Figure 3. *Tropinota hirta* (Poda, 1761), near Kavos

Avlaki, but its European distribution does not extend into the Balkans or Greece, where it appears to be replaced by *Anisoplia flavipennis* Brulle, 1832....which the specimen in question appears not to be. Again, in the absence of more research, this species, and the two *Oxythyrea* species shown in Figures 6 and 7, remain unidentified at species level.

Both Figure 6 and Figure 7 have been routinely identified by other coleopterists as *Oxythyrea funesta*, but I am not convinced, as yet, and would welcome any information regarding a field-worthy key for these species....if there is one.

It is clear that much work needs to be done regarding the Cetoniidae in Corfu, and I have yet to find another entomologist, familiar with the eastern European fauna, to work with on this group. Perhaps this article will stimulate some interest and a few names!

References

Sutton, P.G., (2009), A selection of beetles (Coleoptera) from the island of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **68**, No. 485, pp.145-151.
Sutton, P.G., (2010), More spectacular beetles and other insects from the island of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **69**, (No. 491): 131-136.



Figure 4. *Haplidia transversa* (Fabricius, 1801), Roda, May 2008.



Figure 5. Unidentified *Anisoplia* sp., Avlaki, May 2007.



Figure 6. Unidentified *Oxythyrea* sp., Ropa Valley, May 2011.



Figure 7. Unidentified *Oxythyrea* sp., Ropa Valley, May 2011.





***Chlaenius vestitus* Paykull, 1790 and *Scarites buparius* (Forster, 1771), new to the Ionian Islands, and other carabids from Corfu (Kérkira)**

by Dr Peter G. Sutton (7388)

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Introduction

The Carabidae of Corfu have been studied as part of a wider survey of the invertebrate fauna of the island, resulting in a number of new observations. The recent work: *Ground Beetles (Carabidae) of Greece* by Arndt *et al* (2011) has allowed the status of certain subfamilies present on Corfu, including the Cicindelinae, Carabinae, and Brachininae, and also the Chlaeniini (a tribe from the subfamily Harpalinae) and Scaritini (a tribe from the subfamily Scaritinae) to be reviewed.

Two species, *Chlaenius (Chlaeniellus) vestitus* Paykull, 1790 and *Scarites (Scalophorites) buparius* (Forster, 1771), appear to be new to the Ionian Islands according the above study (Arndt, E., pers. comm.; Sfenthourakis, S., pers. comm.). Some other carabids of interest, e.g. *Myas chalybaeus*, are also described. In accordance with the above work, the order and suprageneric taxonomy in this work follows the catalogue by Löbl and Smetana (2003).

Cicindelinae – Tiger Beetles

The checklist provided by Arndt *et al* (*loc. cit.*) indicates the presence of 19 species of the Cicindelinae in Greece, of which the following four species are recorded from the Ionian Islands:

Calomera littoralis nemoralis (Olivier, 1790)

Cephalota (Taenidia) circumdata circumdata (Dejean, 1826)

Cicindela (s.str.) *campestris olivieri* Brullé, 1832

Cylindera (Eugrapha) trisignata hellenica (Cassola, 1973)

Two of these species have been recorded from Corfu by the author: *Calomera littoralis nemoralis* from Lake Korission (Figure 1) and San Stephanos beach on the north-west coast (Figure 2) and *Cicindela campestris olivieri* (Figure 3) from the Ropa valley.



Figure 1. *Calomera littoralis nemoralis* from San Stefanos (N.W.Corfu).



Figure 2. *Calomera littoralis nemoralis* from Lake Korission



Figure 3. Underside of *Cicindela campestris olivieria* from Ropa Valley.

Carabinae

The checklist provided by Arndt *et al* (*loc. cit.*) indicates the presence of 31 species of the Carabinae in Greece, of which the following four species are recorded from the Ionian Islands:

Carabus (Oreocarabus) preslii neumeyeri Schaum, 1856

Carabus (Oreocarabus) preslii preslii Dejean & Boisduval, 1830

Carabus (Pachystus) graecus graecus Dejean, 1826

Carabus (Procrustes) coriaceus cerisyi Dejean 1826

A fifth species, *Carabus (Oreocarabus) hortensis* Linnaeus, 1758 also appears in the above checklist. However, the work of Turin (2003) indicates that *C. hortensis* should not be present in the Ionian Islands and is replaced by *C. preslii* in this southern Balkan region. This was raised in a communication with Erik Arndt who revealed that an error that had appeared in the checklist and that *C. preslii* had indeed replaced *C. hortensis* in the Ionian Islands. It should be noted that the text describing both species in Arndt *et al* (*loc. cit.*) is absolutely correct in this respect.

Two of the above species, *Carabus preslii neumeyeri* (Figure 4) and *Carabus coriaceus cerisyi* (Figure 5) have been found by the author on



Corfu. Both species appear to have a fairly general distribution across the island, and have been found together from the top of Mount Pantokrator to the lowlands, albeit sporadically and in small numbers.



Figure 4. *Carabus preslii neumeyeri* (considered to be *Carabus preslii jonicus* in: Turin (2003), see text.)



Figure 5. *Carabus coriaceus cerisyi* (considered to be *Carabus coriaceus mediterraneus* in: Turin (2003), see text.)



The taxonomic status of *Carabus preslii neumeyeri*, which has in the past been treated as a subspecies of *Carabus hortensis*, is by no means clearly established. Turin (*loc. cit.*) indicates that "further studies are needed to clarify taxonomic status" and that according to the work of Deuve, it is *Carabus preslii jonicus*, that exists on Corfu, stating that it "seems to be distinct from neumeyeri." Similarly, the work of Turin suggests that *Carabus coriaceus cerisyi* has the following distribution: "C. parts of Balkan peninsula, from Serbia and S.Romania, through Macedonia, W. and C. Bulgaria to Greece (including Peleponnissos), islands of the adjacent archipelagos, and widely distributed in Asiatic Turkey, up to N.W. Syria" whereas the subspecies likely to be found on Corfu, *Carabus coriaceus mediterraneus* Born, 1906, has the following distribution: "S.Albania, Ionian islands, S.Italy (Calabria, Puglia)".

Scaritinae: Scaritini

The Checklist provided by Arndt *et al* (*loc. cit.*) indicates the presence of six species of the Scaritini in Greece, of which the following three species are recorded from the Ionian Islands:

Distichus (s.str.) *planus* Bonelli, 1813

Scarites (*Parallelomorphus*) *laevigatus* Fabricius, 1792

Scarites (*Parallelomorphus*) *terricola terricola* Bonelli, 1813



Figure 6. *Scarites buparius*, wet sandy habitats, Lake Korission.



According to Apfelbeck (1904), *Distichus planus* (as *Scarites planus*) has been found on Corfu. No mention is made of *Scarites (Scallophorites) buparius* (Forster, 1771) being present on Corfu in any literature other than Sutton, (2009). *Scarites buparius* (Figure 6), which is characterised by its impressive size (23-45 mm), short ovate elytra and superficial striae, adds a fourth species to the Ionian islands.

Chlaeniini

The Checklist provided by Arndt *et al* (*loc. cit.*) indicates the presence of 18 species of the Chlaeniini in Greece, of which the following six species are recorded from the Ionian Islands:

Callistus lunatus (Fabricius, 1775)¹

Chlaenius (Chlaenites) spoliatus spoliatus (P.Rossi, 1792)

Chlaenius (Chlaenius) festivus festivus Panzer, 1796

Chlaenius (Dinodes) decipiens (Dufour, 1820)

Chlaenius (Epomis) dejeanii (Dejean, 1831)

Chlaenius (Trichlaenius) aenocephalus aenocephalus (P.Rossi, 1790)



Figure 7. *Chlaenius vestitus*, freshwater habitat, Issos beach.

¹ I was pleased to see that *Callistus lunatus* had been recorded from Corfu, and this small but showy carabid is a species that I will certainly look out for on the island. *Callistus lunatus* was one of the great rarities in the UK that was a permanent fixture on my list of species to find as a boy. In later years I searched for it in vain with my brother in the wastelands of east London, with an abiding memory of high rise flat boys pushing rods through railings to catch fish in the now clean canals.



Chlaenius festivus and *Chlaenius aenocephalus* have been recorded from Corfu according to Apfelbeck (1904). Three species from the genus *Chlaenius* have been found by the author on Corfu. *Chlaenius vestitus* was found running over wet mud near running water near Issos Beach at the southern end of Limni Korission. The specimens were identified by the conspicuously large yellow margin at the edge of the elytra and appeared to be happy to completely submerge themselves under the water. The elytra are covered with a fine layer of hairs that waterproof the beetle and apparently allow it to retain a layer of breathable air. Both features are visible in Figure 7. This species has not, apparently, been recorded from Corfu or the Ionian islands (Arndt, E., pers. comm.; Sfenthourakis, S., pers. comm.).

Chlaenius spoliatus (Figure 8) was found at the waters edge on the muddy banks of the Ropa River at Vatos (Sutton, 2009).



Figure 8. *Chlaenius spoliatus*, Ropa River banks, Vatos.

Chlaenius festivus (Figure 9) was found in a drier habitat near Temploni in the Ropa Valley in February 2012. There was no obvious connection with wetter habitats although the surrounding area was regularly flooded during winter rains.



Figure 9. *Chlaenius festivus*, drier habitats, Ropa Valley.

Brachininae (including the Bombardier beetles)

I have encountered the genus *Brachinus* on a number of occasions, from the marshlands around Limni Korission and the temporary ponds at Temploni, to the drier habitats in the Ropa Valley. On some occasions, particularly on the banks of wetland habitats, they have been found in large congregations, as illustrated in the following diary extract from Temploni:

"On the muddy shaded banks there were remarkable hordes of Bombardier beetles, literally by the hundred in the damp mud as I lifted up a rock. I tried to separate what appeared to be an unusually marked ground beetle from their number with a stick, which precipitated an impressive firework display of audible explosions and miniature puffs of smoke reminiscent of the view from an aerial bombing raid."

While going through my pictures of *Brachinus* from the island, it became clear to me that I had recorded more than one species.



Figure 10. Bombardier beetle *Brachinus* sp. from the Ropa Valley.



Figure 11. Bombardier beetle *Brachinus* sp. from Lake Korission.

It is extraordinary that while Corfu is, to a large extent, poorly represented by some groups of carabids, the genus *Brachinus* is present in remarkable diversity, and the following species have been recorded from the island by Apfelbeck (1904) (updated in accordance with Arndt *et al.* 2011):

Brachinus (s.str.) *ejaculans* Fischer von Waldheim, 1828

Brachinus (s.str.) *elegans* Chaudoir, 1842 (by Apfelbeck (1904) as *B. ganglbaueri* Apfelbeck 1904 (syn.))

Brachinus (s.str.) *plagiatus* Reiche, 1868

Brachinus (s.str.) *psophia* Audinet-Serville, 1821

Brachinus (*Brachynidius*) *brevicollis* Motschulsky, 1844 (by Apfelbeck (1904) as *B. peregrinus* Apfelbeck 1904 (syn.))

Brachinus (*Brachynidius*) *explodens* (Duftschmid, 1812)

Brachinus (*Cnecostolus*) *bayardi* Dejean, 1831

Brachinus (*Cnecostolus*) *exhalans* (P.Rossi, 1792)

Brachinus (inc.sed.) *nigricornis* Gebler, 1829 (by Apfelbeck (1904) as *B. incertus* Csiki (1914))

(Arndt *et al.* (*loc. cit.*) also report *Brachinus berytensis* Reiche & Saulcy, 1855 from the Ionian islands.)



The majority of these species can only be separated from each other through microscopic examination. The prevalence of *Brachinus* species on Corfu would certainly make an excellent subject of study for those wishing to familiarise themselves with this group.

Bilý (1990) offers the following point of interest regarding the well-known explosive anti-predator feature of the *Brachinus* species, which is considered to be the most highly evolved defence mechanism of all the carabids: "*Peroxide is present in the gland in a concentration unknown elsewhere in the animal kingdom (a full 28 per cent)*". Regarding the species featured in the publication, *Brachinus explodens*, he goes on to state that, "*Despite the abundance of this bombardier beetle, scientists have as yet been unsuccessful in determining its host.*" This statement has now changed and in 2008, Saska and Honek revealed that the larvae of this species and another dryland species, *Brachinus crepitans* (the species familiar to us in the UK), "*develop on the larvae of spring breeding species of the genus Amara.*"

Brachinus species, along with carabids from the genus *Lebia* are ectoparasites of other beetle larvae. Juliano (1984), in addition to citing previous work revealing that (wetland) *Brachinus* sp. were ectoparasitoids of pupal aquatic beetles from the Hydrophilidae and Gyrinidae, went on to describe his observations of *Brachinus* larvae also parasitizing the pupae of the Dytiscidae, with up to three larvae on each pupa.



Figure 12. A representative of the European-American fauna: *Mydas chalybaeus*, Ropa Valley.



Other species of interest from Corfu have included the visually stunning *Myas* (s.str.) *chalybaeus* (Palliardi, 1825), (Figure 12), and two species that have been identified to genus only: *Zabrus* (possibly *graecus*, Figure 13) and *Carterus* (possibly *rufipes*, which has not been reported from the Ionian islands, Figure 14).



Figure 13. *Zabrus* sp., Mount Pantokrator.



Figure 14. *Carterus* sp., Ropa Valley.



Acknowledgements

Sincere thanks must go to Erik Arndt and Spyros Sfenthourakis for their kind help and generosity regarding the Greek Carabidae.

References

Apfelbeck, V., (1904), *Die Käfer der Balkanhalbinsel, mit besonderer Berücksichtigung Klein-Asiens und der Insel Kreta*. 1. Band. Familienreihe Caraboidea. R. Friedländer und Sohn, Berlin, ix + 422 pp.

Arndt, E., Schnitter, P., Sfenthourakis, S. & Wrase, D.W., (2011), *Ground Beetles (Carabidae) of Greece*. Pensoft, Sofia-Moscow, 393 pp.

Bilý, S., (1990), *A Colour Guide to Beetles*, Treasure Press, Artia, Prague. 223 p.

Juliano, S.A., (1984), Multiple feeding and aggression among larvae of *Brachinus lateralis* Dejean (Coleoptera: Carabidae), *The Coleopterists Bulletin*, **38** (No.4), pp. 358-360.

Löbl, I. and Smetana, A., (eds) (2003): *Catalogue of Palaearctic Coleoptera*. Volume 1, Archostemata-Myxophaga-Adephaga. Apollo Books, Stenstrup, 819pp.

Saska, P. and Honek, A., (2008), *Synchronization of a coleopteran parasitoid, Brachinus spp. (Coleoptera: Carabidae) and its host*, BioOne Online Journals, <http://www.bioone.org/doi/abs>

Sutton, P.G., (2009), A selection of beetles (Coleoptera) from the island of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **68**, No. 485, pp.145-151.

Trautner, J. and Geigenmuller, K., (1987), *Tiger Beetles Ground Beetles – Illustrated Key to the Cicindelidae and Carabidae of Europe*, Josef Margraf, Aichtal/Germany, 488 pp.

Turin, H., Penev, L., & Casale, A., (2003), *The genus Carabus in Europe. A synthesis*. Pensoft, Sofia-Moscow, 511 pp.

Weisner, J., (1992), *A Checklist of the Tiger Beetles of the World*, Erna Bauer, Keltern, 364 pp.





***Tropidopola graeca graeca* Uvarov, 1926, newly recorded for Corfu (Kérkira) and other Orthoptera of interest**

by Dr Peter G. Sutton (7388)

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A number of orthopterans from Corfu are described including *Tropidopola graeca graeca* Uvarov, 1926, which is considered to be a newly recorded species for the island. Several species that were identified in a checklist for the Orthoptera and allied insects of Corfu (Sutton, 2009) have been illustrated with photographs, including a species that was not previously included, the termite *Reticulitermes lucifugus* (Rossi, 1792).

Several visits to Corfu have been made by the author since the publication of the above checklist, resulting in a number of interesting observations. In August 2005, Chabrier's Bush-cricket *Eupholidoptera chabrieri gorganica* La Greca, 1959 was found on sand dunes at Aghios Stefanos on the north-west coast of Corfu (Figure 1).



Figure 1. Chabrier's Bush-cricket *Eupholidoptera chabrieri gorganica*, sand dune habitat, Aghios Stefanos



Several years later, a specimen (Figure 2) was found in the ascending foothills of the northern mountains travelling from Acharavi towards Mt. Pantokrator, and was assumed to be the same species in accordance with the following statement: “*Chabrier's Bush-cricket Eupholidoptera chabrieri gorganica La Greca, 1959, this is currently assumed to be the sole species of Eupholidoptera occurring on the island of Corfu. There is no current evidence to suggest that the Epirus Bush-cricket Eupholidoptera epirotica (Ramme, 1927) was ever present on the island (L. Willemse, pers. comm., 08.vi.2009)*”. However, on closer inspection, there appeared to be some differences between the two specimens and while it is unlikely that the two Greek subspecies both occur together, it is worth investigating. The Acharavi specimen was found in a sub-montane habitat in May, while the other was found in coastal dune habitat in August. The subspecies in question are shown in Figure 3, which provides the current known distribution of *Eupholidoptera chabrieri gorganica* and *Eupholidoptera chabrieri schmidti* in Greece and Corfu. This latter subspecies has been given species status *Eupholidoptera schmidti* (Fieber, 1861) by some authors, *e.g.* Fontana *et al.* (2002). This reference also states that, “*The song (of E. schmidti) can hardly be distinguished from the song of E. c. chabrieri, (the Italian subspecies from the Veneto region), differences have so far not been studied*”, and it is likely that this may also be the case for *schmidti* and *gorganica*. At present, further study is required to ascertain their status.



Figure 2. Chabrier's Bush-cricket *Eupholidoptera chabrieri gorganica*, submontane habitat, near Acharavi.



Figure 3. Current known distribution of Chabrier's Bush-cricket *Eupholidoptera chabrieri gorganica/schmidti* in Greece (Reproduced with kind permission from Willemse (1984).)

The previous checklist highlighted the important contribution made by Vrabec and Kcárek (2005), who recorded seven new species of Orthoptera for the island. These species were included as part of a list of 37 species of Orthoptera recorded from the northern part of Corfu from surveys conducted in 2001, 2002 and 2003. Work conducted around the village of Almyros on the northern coast exemplified the species richness to be found in certain areas of Corfu and yielded 33 species of Orthoptera, including two members of the Mogoplistinae: *Arachnocephalus vestitus* Costa, 1855 and *Mogoplistes brunneus* Serville, 1839. A recent communication with Dr Karim Vahed, revealed that he had recorded the third representative of that subfamily found in Corfu, *Pseudomogoplistes squamiger* (Fischer, 1853) at a location "very near the sea (about 2ft away) in Palaeokastritsa."

Other members of the Gryllidae encountered on recent trips are the Desert Cricket *Melanogryllus desertus* (Pallas, 1771), from the subfamily

Gryllinae, which was been found at Limni Korission and near Temploni in the Ropa Valley (Figures 4a and 4b), and the diminutive Marsh Cricket *Pteronemobius heydenii* (Fischer, 1853), the sole member of the subfamily Nemobiinae in Corfu, which was found along the banks of the Ropa River at Vatos (Figure 6).



Figure 4 (a) Male Desert Cricket *Melanogryllus desertus*, near Temploni, Ropa (b) female, Lake Korission



Figure 5. Marsh Cricket *Pteronemobius heydenii*, Vatos.



The female specimen of the Desert Cricket was found in the marshy fields at the southern end of Limni Korission. It was at this site that I saw a spectacular emergence of winged termites¹ *Reticulitermes lucifugus* covering the dead wood of a fallen tree, and transforming it, with the aid of the morning sun, into a shimmering surface feathered with mother of pearl leaves (Figure 6). On closer inspection I could see the bulldog guards beneath them, with their sickle jawed heads. Elsewhere among the colony I noticed, for the first time, that the pale translucent white workers, which were blind, were accompanied by other white individuals, which were not (Figure 7). I concluded that these were destined to become part of a communal marital flight, like the one that was about to occur. This appeared to be confirmed later when I observed white, eyed individuals with developing wing buds (Figure 8).



Figure 6. A pre-marital congregation of termites *Reticulitermes lucifugus*, Limni Korission

¹ Termites were reclassified in 1996 as being more akin to cockroaches than Hymenoptera, and are now routinely included in the list of species allied to the Orthoptera.



Figure 7. *Reticulitermes lucifugus*, workers



Figure 8. *Reticulitermes lucifugus*, eyed individual with developing wings.



My journey south towards Issos beach continued until I reached the concrete leat that allows the water draining from the fields to reach the sea through the dunes (Figure 9). This artificial waterway, which dries up completely during the summer months, is always very productive for all number of species, and in addition to the many beetles e.g. *Scarites buparius*, that haunt its hidden cavities, I found another specimen of the Mole Cricket *Gryllotalpa* sp. when I lifted a mat of algal-bound vegetation (Figure 10). A dead male specimen of the Mole Cricket was found by Karim Vahed (11.xi.2011, pers. comm.) during his last visit to Corfu and was promptly preserved in ouzo, providing an outside chance of a DNA analysis to determine whether or not the species on Corfu is *G. krimbasil*.



Figure 9. The concrete leat near Issos beach.



Figure 10. The Mole Cricket *Gryllotalpa* sp., near Issos beach.



Also present were large numbers of grasshoppers including the strong-flying Long-winged Grasshopper *Aiolopus thalassinus* (Fabricius, 1781), (Figure 11). This species can be distinguished from the very similar *Aiolopus strepens* (Latrielle, 1804) by the shape of the pronotum, but perhaps more easily by the leg width to leg length ratio of the hind femur: femur length is three and a half times greatest width for *strepens*, four times greatest width for *thalassinus* (Willemse, 1985a).



Figure 11. Long-winged Grasshopper *Aiolopus thalassinus*, Limni Korission

The undisturbed fields beyond Kavos are a regular destination, and while these trips have been unsuccessful to date regarding my pursuit of the Aesculapian Snake, they have always provided ample reward on the entomological front. One particular site, where a small river meets the sea to the north of the town is a hot-spot for Orthoptera, including several species of grasshopper. A previous visit had produced *Pyrgomorpha conica conica* (Olivier, 1791), which I expected to find again among the stands of caned reeds that held the sand near the foreshore, along with the blue and red-winged grasshoppers that flew between them. What I found instead was a similar cone-headed grasshopper, *Tropidopola graeca graeca* Uvarov, 1926 (Figure 12), which is newly recorded for the island (Luc Willemse, 22.v.2011, pers. comm.). Both species are very adept at



maintaining their position on the opposite side of the reed stem from your line of view, but a stealthy approach, and a slow hand movement towards one side of the stem will bring them shuffling into view as they respond to it.



Figure 12. *Tropidopola graeca*, near Kavos

Acknowledgements

Sincere thanks to Luc Willemse for useful discussion, and for confirming identification and records, Fer Willemse and the Hellenic Zoological Society for kind permission to reproduce the map shown in Figure 3, and Vladimir Vrabec and Karim Vahed for their kind provision of data and records regarding the orthopteran fauna of Corfu.

References

Fontana, P., Buzzetti, F.M., Cogo, A., Odé, B., (2002), *Guida al riconoscimento e allo studio di Cavallette, Grilli, Mantidi e Insetti affini del Veneto. Blattaria, Mantodea, Isoptera, Orthoptera, Phasmatodea, Dermaptera, Embiidina*. Museo Naturalistico Archeologico di Vicenza Ed., Vicenza: 1-592.

Kcárek, P. and Vrabec, V., (2005). Contribution to the knowledge of orthopteroid insects of Corfu Island, Greece (Orthoptera, Mantodea, Dermaptera, Blattaria, Isoptera), *Entomofauna carpathica*, 17: 8-10.



Sutton, P.G., (2009), A checklist of the Orthoptera and allied insects of Corfu (Kérkira), *Bull. Amat. Ent. Soc.*, **68**, (485): 152-160.

Willemse, F., 1984. Fauna Graeciae I. *Catalogue of the Orthoptera of Greece*. Athens: 1-275.

Willemse, F., 1985a. Fauna Graeciae II. *A key to the Orthoptera species of Greece*. Athens: 1-288.

Willemse, F., 1985b. Fauna Graeciae Ia. *Supplementary notes on the Orthoptera of Greece*. Athens: 1-47.

Willemse, F., and Willemse, L., 2008. An annotated checklist of the Orthoptera-Saltatoria from Greece including an updated bibliography. *Articulata Beibft*, **13**: 1-91.





Acknowledgements

Writing this collection of articles would not have been possible without the generous assistance and expertise of a considerable number of people.

It has been my great privilege to work with and correspond with the following:

Erik Arndt, Spyros Sfenthourakis, Stamatios Ghinis, Robert Angus, Garth Foster, Hans Fery, Lars Hendrich, Julia Lopau, Matt Rowlings, Martin Rejzek, Maria Dimaki, Vincent Kalkman, K-D. Dijkstra, Peter Russell, Rob Parker, David Baldock, Karim Vahed, Luc Willemse, Fer Willemse and Vladimir Vrabec.

I should also like to thank Val McAtear for invaluable assistance at the Royal Entomological Society library and headquarters at Mansion House.

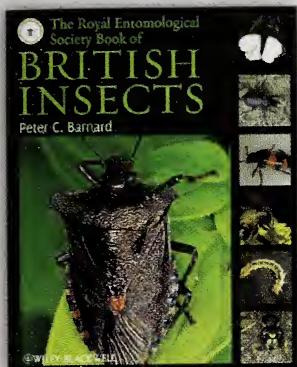
A special thank you must go to Dr Lee Durrell for kindly allowing access to the work of Dr Theo. Stefanides and allowing me to use additional photographic material from the Durrell collection; Colin Stevenson for photography at Les Augres Manor and kindly providing the image used in Figure 1 in the introduction to this special issue; and Dr Spiros Giourgas, who has been an indispensable asset to my studies on the island of Corfu.

Peter Sutton, April 2012



Figure 1. (From left to right) the author, Dr Spiros Giourgas, and Leonidas Collas, Secretary General for the Hellenic Society for the Protection of Nature.

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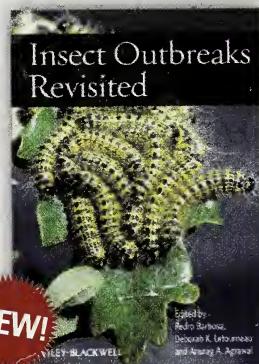
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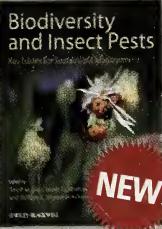
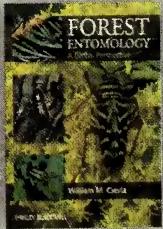
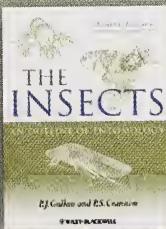
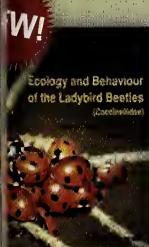
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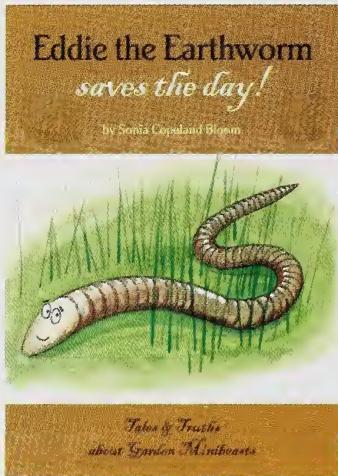
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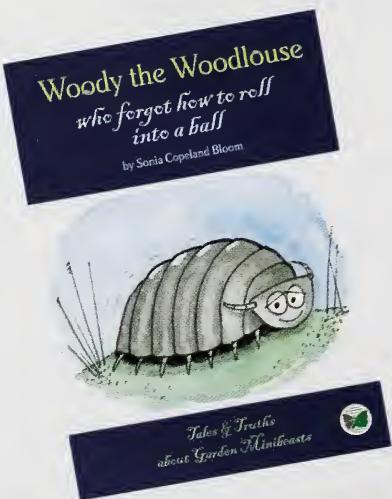
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PO Box 8774, London SW7 5ZG

www.amentsoc.org

The
Bulletin
of the Amateur Entomologists' Society

Volume 71 • Number 501

April 2012

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